

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A method of dynamically generating and serving web pages, the method comprising:

receiving a page request at a server, the page request generated by a web browser running on a user computer and corresponding to a web page that is generated dynamically;

in response to the page request, sending a service request from the server to a service to request service data to incorporate into the web page;

before the service returns the service data, transmitting a first portion of the web page from the server to the user computer for display by the web browser, said first portion including viewable content that is viewable on the user computer while the service request is pending, and including a placeholder for the requested service data, said first portion transmitted to the user computer while said service request is pending;

after the service returns the service data and before the web page has been fully loaded, transmitting from the server to the user computer a second portion of the web page, the second portion including the service data; and

transmitting to the user computer a page update handler which, when executed by the web browser, incorporates the service data included within the second portion of the web page into the first portion of the web page in a viewable format to complete the web page;

whereby the method enables an incomplete version of the requested web page to be viewed on the user computer while the service data is being retrieved.

2. (Original) The method of Claim 1, wherein the placeholder comprises a display object, and the page update handler populates the display object with at least some of the service data included within the second portion of the web page.

3. (Original) The method of Claim 2, wherein the display object is positioned above at least some of said viewable content within the first portion of the web page.

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4. (Original) The method of Claim 1, wherein the service data is included in the second portion of the web page in a condensed form in which at least some format coding is omitted, and the page update handler adds format coding to the service data to format the service data for display, whereby a quantity of data transmitted to the web browser is reduced.

5. (Original) The method of Claim 1, wherein the service data is included in the second portion of the web page in a hidden format.

6. (Original) The method of Claim 1, wherein the page update handler is transmitted to the user computer as part of the first portion of the web page.

7. (Original) The method of Claim 1, wherein the page update handler is transmitted to the user computer as part of a library file, separately from the web page.

8. (Original) The method of Claim 1, wherein the placeholder for the requested service data is included within the first portion of the web page in response to a failure of the service to return the service data within a selected time interval.

9. (Original) The method of Claim 1, wherein the placeholder for the requested service data is included within the first portion of the web page in response to a server decision to defer rendering of a portion of the web page, said server decision being based at least in part on response time data collected for the service.

10. (Original) The method of Claim 1, wherein the placeholder for the requested service data is included within the first portion of the web page in response to a server decision to defer rendering of a portion of the web page, said server decision taking into consideration at least one of the following: (a) a load level of the service, (b) a load level of a web server system that responds to the page request.

11. (Original) The method of Claim 1, wherein the second portion of the web page includes a command that causes the web browser to execute the page update handler.

12. (Original) The method of Claim 1, wherein the first portion of the web page includes a command that causes the web browser to execute the page update handler upon completion of loading of the web page.

13. (Original) The method of Claim 1, wherein the page update handler comprises a JavaScript function.

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14. (Original) The method of Claim 1, wherein the service request is one of a plurality of service requests generated in response to the page request.

15. (Original) The method of Claim 1, wherein the page update handler incorporates the service data into the first portion of the web page as mouse-over text that is displayed by the web browser when a mouse cursor is positioned over a corresponding display element.

16. (Original) The method of Claim 1, wherein the page update handler selects a display format to use to display the service data in the web page based at least in part on a dimension of a window of the web browser running on the user computer.

17. (Original) The method of Claim 1, wherein the page update handler selects a display format to use to display the service data in the web page based at least in part on a quantity of the service data.

18. (Previously presented) A method of responding to a request from a web browser for a web page, the method comprising:

- sending a service request to a service to request service data to be displayed within a portion of the web page, said service request sent to the service in response to the request for the web page, and before the requested web page is transmitted to the web browser;

- determining whether the service returns the requested service data within a selected time interval;

- when the service returns the requested service data within the selected time interval, populating said portion of the web page with the service data prior to transmitting the web page to the web browser; and

- when the service does not return the requested service data within the selected time interval: (a) transmitting at least said portion of the web page to the web browser without the service data while the service request is pending, to thereby enable an incomplete version of the web page to be displayed by the web browser while the service data is being retrieved, (b) in response to receiving the requested service data from the service, transmitting the service data to the web browser, and (c) invoking a page update handler which, when executed by the web browser, populates said portion of the web page with the service data transmitted in (b);

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wherein the method is performed by a server system that comprises one or more physical servers.

19. (Original) The method of Claim 18, wherein the page update handler incorporates the service data into the portion of the web page above other viewable content included in the portion of the web page.

20. (Original) The method of Claim 18, wherein the service data is transmitted to the web browser as part of the web page, and is moved or copied to the portion of the web page by the page update handler.

21. (Original) The method of Claim 18, wherein the service data is transmitted to the web browser within a separate web page within a hidden window.

22. (Original) The method of Claim 18, wherein invoking the page update handler comprises including, within the web page portion transmitted in (a), a command that causes the web browser to execute the page update handler upon completion of loading the web page.

23. (Original) The method of Claim 18, wherein the page update handler populates the portion of the web page with the service data before the web page has finished loading.

24. (Original) The method of Claim 18, wherein the page update handler selects a display format to use to display the service data in the web page based at least in part on a size of a window of the web browser.

25. (Original) The method of Claim 18, wherein the page update handler selects a display format to use to display the service data in the web page based at least in part on a quantity of the service data.

26. (Original) A web server system configured to respond to page requests from web browsers according to the method of Claim 18.

27. (Previously presented) A method of generating a web page in response to a request from a web browser, the method comprising:

(a) sending a service request to a service to request service data to be displayed in the web page;

(b) while the service request is pending, transmitting to the web browser at least a first portion of the web page, said first portion including content that is viewable within the web browser while the service data is being retrieved;

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(c) after the service responds to the service request by returning the service data, sending the service data to the web browser; and

(d) instructing the web browser to execute a page update handler that, when executed, incorporates a viewable representation of the service data, as transmitted in (c), into the first portion of the web page to complete the web page;

wherein the method, including (a), (b), (c) and (d), is performed by a web server system that comprises one or more physical servers, and the method enables a user to view an incomplete version of the web page while the service data is being retrieved.

28. (Original) The method of Claim 27, wherein the first portion of the web page includes a display object that is initially displayed without the service data, and which is subsequently populated with the service data by the page update handler.

29. (Original) The method of Claim 28, wherein the display object is positioned above at least some of said content within the first portion of the web page.

30. (Original) The method of Claim 27, wherein step (c) comprises transmitting the service data as part of the web page before the web page has finished loading.

31. (Previously presented) The method of Claim 27, wherein step (c) comprises transmitting the service data to the web browser as part of a secondary web page that is loaded by the web browser within a hidden window and is accessed by the page update handler.

32. (Canceled)

33. (Original) The method of Claim 27, wherein step (d) comprises including within the first portion of the web page a command that causes the web browser to execute the page update handler upon completion of loading the web page.

34. (Original) The method of Claim 27, wherein step (d) comprises including with the service data transmitted in step (c) a command that causes the web browser to execute the page update handler.

35. (Original) The method of Claim 27, wherein at least step (d) is performed in response to a failure of the service to return the requested service data within a selected time interval.

36. (Original) The method of Claim 27, wherein at least step (d) is performed in response to a server decision to defer rendering of a portion of the web page, said server decision being based at least in part on response time data collected for the service.

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37. (Currently amended) The method of Claim 27, wherein step (d) is performed in response to a server decision to defer rendering of a portion of the web page, said server decision taking into consideration at least one of the following: (1) a load level of the service, (2) a load level of a web server system that responds to the request from the web browser.

38. (Original) The method of Claim 27, wherein the page update handler incorporates the service data into the first portion of the web page as mouse-over text that is displayed by the web browser when a mouse cursor is positioned over a corresponding display element.

39. (Original) A web server system configured to perform the method of Claim 27.

40. (Original) A web page generated according to the method of Claim 27 represented within a computer memory.

41. (Original) The method of Claim 27, wherein step (c) comprises sending the service data to the web browser in a substantially unformatted form to reduce a quantity of data transmitted to the web browser, wherein the page update handler adds format coding to the service data to incorporate the viewable representation of the service data into the web page.

42. (Original) The method of Claim 27, wherein the page update handler selects a display format to use to display the service data in the web page based at least in part on a dimension of a window of the web browser.

43. (Original) The method of Claim 27, wherein the page update handler selects a display format to use to display the service data in the web page based at least in part on a quantity of the service data.

44-48: (Canceled)

49. (Previously presented) The method of Claim 1, wherein the method is performed by a web server system that comprises one or more physical servers.

50. (Previously presented) The method of Claim 18, wherein the method additionally comprises the server system responding to said request from the web browser by dynamically generating said portion of the web page using data retrieved from at least one additional service.

51. (Previously presented) The method of Claim 27, wherein the method additionally comprises the web server system responding to said request from the web browser by dynamically generating said first portion of the web page using data retrieved from at least one additional service.

52. (Previously presented) A system for responding to web page requests, the system comprising:

a web server system that comprises one or more physical servers, said web server system responsive to page requests from browsers running on user computing devices by generating and serving web pages that include data retrieved from one or more services, said web server system operative to respond to a request from a browser for a web page according to a process that comprises:

sending a service request to a service to request service data to be displayed in the web page;

while the service request is pending, transmitting to the browser at least a first portion of the web page, said first portion including content that is viewable with the browser while the service data is being retrieved;

after the service responds to the service request by returning the service data, sending the service data to the browser; and

causing the browser to execute a page update handler that, when executed, causes a viewable representation of the service data to be incorporated into the first portion of the web page to complete the web page.

53. (Previously presented) The system of Claim 52, wherein the web server system is operative to cause the browser (a) to initially display a display object on the web page without the service data, and (b) to subsequently populate the display object with the service data via execution of the page update handler.

54. (Previously presented) The system of Claim 52, wherein the web server system is operative to send the service data to the browser as part of the web page before loading of the web page by the browser is complete.

55. (Previously presented) The system of Claim 52, wherein the web server system is operative to send the service data as part of a secondary web page that is accessed by the page update handler.

56. (Canceled)

57. (Previously presented) The system of Claim 52, wherein the web server system is operative to cause the browser to execute the page update handler by including, within the first

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portion of the web page, a command that instructs the browser to execute the page update handler upon completion of loading of the web page.

58. (Previously presented) The system of Claim 52, wherein the web server system is operative to cause the browser to execute the page update handler by sending to the browser, with the service data, a command that instructs the browser to execute the page update handler.

59. (Previously presented) The system of Claim 52, wherein the web server system is operative to selectively invoke said process based on a programmatic determination that is dependent upon a response time of said service.

60. (Previously presented) The system of Claim 52, wherein the web server system comprises computer storage that stores the page update handler, and the web server system is operative to send the page update handler to the browser.

61. (Previously presented) The system of claim 60, wherein the page update handler comprises browser-executable code for incorporating the service data into the first portion of the web page as mouse-over text that is displayed by the browser when a mouse cursor is positioned over a corresponding display element.

62. (Previously presented) The system of claim 60, wherein the page update handler comprises browser-executable code for adding format coding to the service data to incorporate the viewable representation of the service data into the web page.

63. (Previously presented) The system of claim 60, wherein the page update handler comprises executable code for selecting, based at least in part on a dimension of a window of the browser, a display format to use to display the service data in the web page.

64. (Previously presented) The system of claim 60, wherein the page update handler comprises JavaScript code.

65. (Previously presented) The system of claim 52, wherein the web server system is additionally programmed to respond to the request from the browser by dynamically generating the first portion of the web page using data retrieved by the web server system from at least one additional service.

66. (Previously presented) The system of Claim 65, wherein the web server system is operative to incorporate into said first portion of the web page a viewable status message reflecting that additional data is being retrieved.

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67. (Previously presented) The method of claim 1, wherein the method additionally comprises responding to the page request by dynamically generating the first portion of the web page on said server using data retrieved from at least one additional service.

68. (Previously presented) The method of claim 67, wherein dynamically generating the first portion of the web page comprises incorporating into the web page a viewable status message reflecting that additional data is being retrieved.

69. (Previously presented) The method of claim 1, wherein the service request is sent from the server to the service before any portion of the requested web page is transmitted to the user computer.

70. (Previously presented) The method of claim 27, wherein the method comprises sending the service request from the web server system to the service in response to the request from the web browser, and before any portion of the web page is transmitted to the web browser.

71. (Currently amended) The system of claim 52, wherein the web server system is operative to send the service request to the service before transmitting any portion of the web page to the ~~browser~~, browser.